

New Varieties and Management Opportunities

*Michigan Wheat Program
Field Day
June 25, 2024*



Eric Olson
<http://wheat.psm.msu.edu/>
Twitter: @MSUWheat

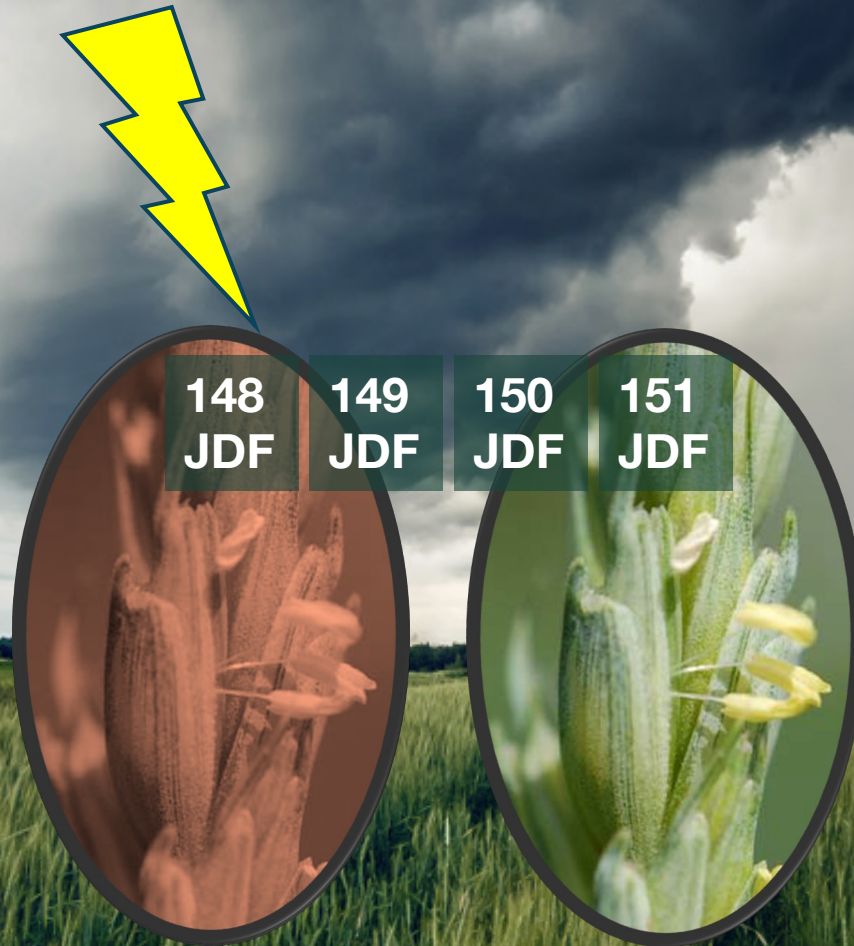


Select multiple varieties with complementary traits

Trait	Range	Influence
Flowering date	early vs. late	<i>fungicide timing</i>
Physiological maturity	early vs. late	<i>harvest timing</i>
Disease resistance	R vs S	<i>profitability</i>
Canopy architecture	upright vs. full	<i>management</i>



Select varieties with different flowering dates



Managing FHB With Resistant Varieties



FHB Index

- FHB Index incorporates both incidence and severity
- Provides an estimate of overall infection

Incidence

80% 50% 40%

Severity

65% 10% 20%

Index

52% 5% 8%

Developing leaf and stripe rust resistant varieties



- Heads of susceptible plants are culled
- Only resistant individuals advanced
- Over 90% of F₄ individuals in the field will be resistant

MI20R0012

Jupiter/VA11W-106

Grain yield and Test Weight Performance

2021: 4 MI locations

2022: 16 locations

2023: 24 locations

Line	Grain Yield		TW	
	21-23		21-23	
	bu/ac		lb/bu	
MI20R0012	108	a	59	a
P25R40	104	c	58	b
SY 100	105	bc	56	c

MI20R0012

Agronomic Traits

Line	Height, inches 22-23, Mason MI	Flowering JDF 22-23, Mason MI	Phys. Maturity 22-23, Mason MI	Grain fill period, 22-23 Mason MI	Preharvest Sprouting 22,23 Mason, MI
MI20R0012	36	151	182	31	1
P25R40	33	153	180	28	1
SY 100	36	152	181	29	6

MI20R0012

FHB Resistance

Line	FHB Index 0-100 20,21, 22, 23	DON ppm 20,21, 22
<i>MI20R0012</i>	39	29
P25R40	42	30
SY 100	44	26
DG9242	13	31
MI20R0096	15	39
Ambassador	71	63

MI20R0012

Rust Resistance

Line	Stripe Rust Severity % Pullman,	Stripe Rust Infection Type, 0-9	Leaf Rust 0-5, greenhouse 21, 22, 23	Leaf rust 0-5, 2022 Wooster, Tiffin, Neoga
MI20R0012	5	2	1	0
P25R40	-	-	3	2
SY 100	-	-	2	4



2024 MSU Wheat Variety Candidates

Line	Yield 2021 - 2023		FHB	Stripe Rust	Leaf Rust	Leaf Spot
MI20R0012	116	<i>a</i>	MR	R	R	R
SY 100	115	<i>a</i>	S	S	R	S
P25R40	115	<i>ab</i>	MS	R	R	S
AM 505	114	<i>abc</i>	MR	R	R	MR
MI21R0058	114	<i>abc</i>	MR	R	S	R
MI21R0051	113	<i>bcd</i>	MR	R	S	R
MI20R0210	113	<i>cde</i>	MR	R	MS	R
MI20R0096	113	<i>cdef</i>	R	R	MS	MS
MI20W0120	111	<i>defghi</i>	MR	R	R	R

Questions and Comments

